## REMARKS/ARGUMENTS

The Office Action of December 14, 2006, has been carefully reviewed and these remarks are responsive thereto. Independent claims 1, 8, 20, 28, 31, 32, and 39 have been amended. Claims 3-4, 15-16, 33-34 and 38 have been cancelled. Claims 1-2, 5-14, 17-22, 25-32, 35-37 and 39 remain pending and allowance of the instant application are respectfully requested.

***Claim Rejections Under 35 U.S.C. §103(a)***

Claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand *et al.* (U.S. patent No. 6,687,252, hereinafter "Bertrand") in view of Takeda et al. (U.S. Publication No. US 2001/0048686 A1) and further in view of Applicant's alleged admitted prior art (as found in Applicant's specification at paragraph 8). This rejection is respectfully traversed for the following reasons.

Applicant respectfully incorporates by reference in its entirety the Response filed October 4, 2006 to the non-final Office Action mailed July 25, 2006.

Independent claims 1, 8, 20, 28, 31, 32, and 39 all relate to, *inter alia*, a GGSN assigning one of a private network address and a public network address to a mobile station based on information contained in an APN field of an Activate PDP context request or a Create PDP Context Request message. The information contained in the APN field is transmitted by the requesting mobile terminal and explicitly indicates requesting one of a private network address and a public network address. As recognized in the Office Action, neither Bertrand nor Takeda, either separately or in combination, teaches or suggests such a feature. Neither Bertrand and Takeda teaches or suggests assignment of a private or a public network address be based on information in the APN field that explicitly indicates requesting one of a private network address and a public network address as requested by the mobile station. Neither Bertrand nor Takeda provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner suggested by the Applicant.

By way of example, claim 1 of the present application, as amended claims in part: "a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information that explicitly

indicates requesting one of a private network address and a public network address." Support for this amendment can be found in at least pages 13-14 of the present application (*see also* paragraph 40 of the present application, as published, U.S. Patent Application Publication No. US 2003 as 2003/0112793).

Claim 1 also claims "the SGSN sending a Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address."

As recognized in the final Office Action (at pp. 3-4), Bertrand does **not** disclose that an Activate PDP Context Request message and a Create PDP Context Request have an APN field containing information relating to a request for one of a private network and a public network address.

As recognized in the final Office Action (at p. 4), Bertrand also does **not** disclose that the public network address or private network address is assigned based on information contained in the APN field of the Create PDP Context Request message.

The Office Action states that Takeda discloses an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address – specifically an APN field containing information identifying a destination network gateway node. There is, however, **no** teaching Takeda that the identification of this destination network gateway node includes an identification of whether the node is one of a private network address and a public network address.

Additionally in Takeda, it is the DHCP server that assigns the IP address to the mobile terminal, not the gateway node. P. 6, ¶ 95. Even so, Takeda does not teach or suggest that the DHCP, in allocating IP addresses, evaluates or receives any information contained in the APN relating to the mobile terminal's request for one of a public network address or a private network address. Neither Bertrand nor Takeda provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner suggested by the Applicant. There is certainly no suggestion in either Bertrand or Takeda for an "Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address."

The Office Action states that it would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Takeda et al., to combine using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address, as suggested by Takeda et al., with the system and method of Bertrand et al., with the motivation being to allow address assignment to be based on the destination network that a mobile station is requesting to communicate with. It is not seen, however, where Bertrand or Takeda teaches any benefit in having an address assignment be based on a particular **type** of destination network address. Neither Bertrand nor Takeda teach any benefit in having an address assignment be one of a private network address and a public network address.

In short, Takeda does not provide a motivation to modify Bertrand to allow address assignment to be based on the type of destination network address. Takeda does not provide a motivation in having an address assignment be one of a private network address and a public network address. Bertrand or Takeda do not alone or in combination teach an "Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address" as claimed in independent claims 1, 8, 20, 32 and 39, as amended. Similarly, Bertrand or Takeda do not alone or in combination teach a "Create PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address" as claimed in independent claims 28 and 31, as amended (*see* paragraphs 40-41 of the present application, as published, U.S. Patent Application Publication No. US 2003.as 2003/0112793).

Absent motivation to modify Bertrand to allow address assignment to be based on the type of destination network address, there is certainly no motivation to further modify Bertrand to provide for an Activate or a Create PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address as claimed in independent claims 1, 8, 20, 28, 31, 32 and 39, as amended.

As recognized in the final Office Action, the teachings of Bertrand et al. and Takeda et al. do **not** disclose explicitly indicating one of a request for a private network address and a public network address (*see* page 18 of the final Office Action). The Office Action states that in the

rejections Official Notice has been taken that explicitly indicating that one of a private network address and a public network address in a request is old and well known in the field of communications. The Office Action cites Applicant's alleged admitted prior art (paragraph 8), and "[n]ewly cited Publication Iyer (U.S. Publication US 2002/0116502)" as "proof that explicitly indicating one of a private network address and a public network address in a request is old and well known in the field of communications."

Paragraph 8 of applicant's application as published, as well as newly cited Iyer, describes the use of a Network Address Translator (NAT). As noted in the Response filed October 4, 2006, Applicant's Background of the Invention does not remedy the deficiencies in Bertrand and Takeda. Paragraph 8 (of the present application, published as U.S. Patent Application Publication 203/0112793) describes the use of a Network Address Translator (NAT). A NAT is used when a host that is assigned to a private address within an administrative domain intends to send an IP address (and possibly other selected fields within the datagram) into a public IP address prior to the IP datagram being sent outside the administrative domain associated with the NAT. A NAT transforms a private IP address (and possibly other selected fields within the datagram) into a public IP address prior to the IP datagram being sent outside the administrative domain associated with the NAT. Similarly, when an IP datagram is sent from a host that is outside the administrative domain associated with the NAT to a host with a private address, then the NAT transforms a public IP address to a private address.

A NAT does not conserve public IP addresses and simultaneously maintain end-to-end security and application friendliness. Indeed, as explained in paragraph 11 of the present application as published, there are two major drawbacks associated with the use of a NAT. The first major drawback is that the NAT-based approach breaks the end-to-end security model by changing the destination address of a datagram and thereby invalidating the authentication header of the datagram. The second major drawback is that certain types of applications cannot work in the presence of a NAT, unless remedial measures are taken, such as the inclusion of an application gateway (proxy). For example when an IP address is embedded into an application protocol unit (PDU), an ALG (Application Level Gateway) is required so that the embedded IP address is changed because a conventional NAT-based address assignment operation will not change the embedded IP address.

As explained in paragraph 12 of the present application as published, in order to overcome the disadvantages associated with NATs, i.e., the security break and the "unfriendliness" toward some applications, a mechanism commonly referred to as Realm Specific IP (RSIP) has gained significant support within the Internet Engineering Task Force (IETF). As noted in paragraphs 13-17 of the present application, RSIP protocol makes use of a NAT unnecessary, and thereby avoids the drawbacks involving NATs.

As explained in paragraph 18 of the present application as published, in the case of a General Packet Radio System (GPRS) network or a GPRS-based network (such as a Universal Mobile Telecommunications System (UMTS)), a Mobile Station (MS) is assigned an IP address by a Gateway GPRS Support Node (GGSN). Currently, such an IP address is an IPv4 address. The protocol that is used for address assignment is specific to GPRS networks and is referred to as PDP Context Activation. PDP (Packet Data Protocol) is an acronym that is used within GPRS networks to refer to IP addresses, X.25 addresses, etc. An administrative domain within GPRS networks (and within cellular networks, in general) is referred to as a PLMN (Public Land Mobile Network).

As explained in paragraph 19 of the present application as published, FIG. 3 shows generic GPRS protocol stacks for a mobile station (MS), base station subsystem (BSS), Serving GPRS Support Node (SGSN) and the Gateway GPRS Support Node (GGSN). The IP address for the MS may be seen on the protocol stack for the MS.

As explained in paragraph 20 of the present application as published, FIGS. 4a-4d illustrate a conventional PDP (Packet Data Protocol) context activation sequence within a GPRS network. During the first step of a conventional PDP context activation shown in FIG. 4a, an MS sends an Activate PDP Context Request message to an SGSN through a BSS. The Activate PDP Context Request message contains appropriate information in the NSAPI, PDP type, PDP Addr, APN, QoS Req, and PDP Config Options in a well-known manner. In FIG. 4b, the SGSN sends a Create PDP Context Request message to a GGSN containing appropriate information in the PDP Type, PDP Addr, APN, QoS Negotiated, TID, Selection Mode, PDP Config Options fields. In FIG. 4c, the GGSN sends a Create PDP Context Response message to the SGSN containing appropriate information in the TID, PDP Addr, BB Protocol, Reordering Reqd, QoS Negot., PDP Config Options and Cause fields. In FIG. 4d, the SGSN then sends an Activate PDP Context

Accept message to the MS containing appropriate information in the NSAPI, PDP Type, PDP Addr, QoS Req, Radio Priority Level and PDP Config Options field.

As explained in paragraph 21 of the present application as published, nevertheless, the GPRS standard does not specify whether private or public IP addresses are assigned to a requesting MS. Address assignment is not a standardization issue because a NAT is currently used at a PLMN boundary when private IP addresses are used. That is, current GPRS deployments rely on NATs at the GGSN when private addresses are assigned to a requesting MS. While this handles the problem of conserving IPv4 addresses, end-to-end security or application friendliness is not provided.

As noted in paragraph 22 of the present application as published, even though a conventional PDP context activation procedure within a GPRS network assigns an IPv4 address to a mobile station, what is needed is a technique for assigning an IPv4 address to a mobile station in a GPRS network or a GPRS-based network that conserves IPv4 addresses and simultaneously maintains end-to-end security and application friendliness.

The present application provides just such a technique, not heretofore available or provided or suggested by the prior art.

In view of the drawbacks involving NATs, and the teaching away of using NATs by using RSIP protocol, one of ordinary skill in the art would not be motivated to incorporate a NAT into a combination of Bertrand and Takeda to provide the present invention. Even if a NAT is incorporated into a combination of Bertrand and Takeda, the combination of the three references would not result in the present invention. A NAT does not involve an Activate or a Create PDP Context message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Rather, a NAT simply transforms a private IP address into a public IP address when a host intends to send an IP datagram to a host that is outside the administrative domain of the sending host.

Independent claims 1, 8, 20, 32, and 39 relate to, *inter alia*, information contained in the APN field of the Activate PDP Context Request message explicitly indicating one of a private network address and a public network address. Independent claims 28 and 31 relate to, *inter alia*, information contained in the APN field of the Create PDP Context Request message explicitly indicating one of a private network address and a public network address.

As discussed on pages 13-14 of Applicant's specification (paragraph [40] as published), the inserted information (in the APN field) relating to whether a public or a private address assignment is desired can be an explicit indication, such as a particular bit (or bits) of the APN field being set. Neither Bertrand nor Takeda nor a NAT, separately or in combination, teaches or suggests such a feature. The Office Action even admits this deficiency of Bertrand and Takeda. Instead, the Office Action alleges that ¶¶ 26-27, 71-72, and 89-90 of Takeda disclose an "an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address." Even assuming the validity of such an allegation, merely containing information relating to a request is distinguishable from containing information in the APN field *explicitly indicating* one of a private network address and a public network address. Significantly, the cited passages only disclose an APN for identifying a gateway node. There is no teaching or suggestion that the APN field includes any explicit indicators of whether a private network address or a public network address is being requested.

The Office may not use Applicant's invention as a blueprint for combining distinct components/features found in Bertrand, Takeda, and a NAT as described in paragraph 8 of the present application (or newly cited Iyer). As such, claims 1, 8, 20, 28, 31, 32 and 39 are allowable for at least this reason.

Claims 2, 5-7, 9-14, 17-19, 21-27, 29, 30 and 35-37 are allowable for at least the same reasons as their respective base claims and further in view of the novel and non-obvious features recited therein.

***Additional Claim Rejections in view of fourth cited reference, Boudreaux***

Claims 7, 19, 27, 30 and 37 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand in view of Takeda and Applicant's alleged admitted prior art on NAT as applied to claims 1-6, 8-18, 20-26, 28-29, 31-36 and 39 above, and further in view of Boudreaux (U.S. Patent No. 6,466,556). This rejection is respectfully traversed for the following reasons.

Claims 7, 19, 27, 30 and 37 all relate to a GPRS-based communications network that is a Universal Mobile Telecommunications System. The Office Action concedes that Bertrand and Takeda and Applicant's alleged admitted prior art does not disclose such a feature. While

Boudreaux may teach a Universal Mobile Telecommunications System, it does not remedy the failure of Bertrand, Takeda, and paragraph 8 of Applicant's specification regarding alleged prior art (or newly cited Iyer) to teach the claimed invention of the independent claims upon which 7, 19, 27, 30 and 37 depend from. As such, claims 7, 19, 27, 30 and 37 are allowable for over the proposed combination of Bertrand, Takeda, Applicant's alleged admitted prior art regarding NAP (or newly cited Iyer), and Boudreaux.

## CONCLUSION

All rejections having been addressed, Applicants respectfully submit that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. However, if for any reason the Examiner believes the application is not in condition for allowance or there are any questions, the Examiner is requested to contact the undersigned at (312) 463-5405.

Respectfully submitted,

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